part, as every one of you have often heard, physicians doing contract work, say that they would give it up if every one else would. They do not relish their low fees, and after a time give up the work, and always with an increase in their prices. With their support for such an organization, we can not fail to succeed in our undertaking.

That the organizations now having need of our services will hinder such a move on our part there is no question, for they will object to the eye for an eye, a tooth for a tooth policy that they now so strenuously demand of us. Let us show some business ability in dealing with our daily affairs and exhibit the same keenness as captains of industry on whom we pride ourselves, when it comes to selling foundered horses or broken down automobiles to our brother practitioners.

Several of our physicians have told me that by bringing this question up again would probably promote dissension among our members, but if necessary, is it not better to have that dissension now and come to an understanding that we have very little ethics, than to go on pretending we are strict disciples of the code as laid down by the A. M. A., which, by the way, is a work of art, very Utopian and seldom followed?

If the cutting of prices, doing contract work and in general giving our services for practically no return, is to go on, I contend that the man who advertises, in the daily press, giving his prices for the day, is just as ethical as any one else and his open method of securing business should not cause him censure.

I would like to see this matter taken up with some seriousness, and see if a committee cannot draw resolutions strong enough to close all loop holes for getting around our business interests.

I trust no one will consider my remarks in a personal manner, for I should be the last one to make personal criticism as I have done contract work, but I do desire to show you a few of our altogether too plain mistakes made by a body of men who are not applying the first principles for business stability.

We need an organization that will in all sense of the phrase, follow part of Section 3, Article I of our Society constitution, which reads: "That the purposes of this Society shall be to guard and foster the material interests of its members, and to protect them from imposition."

PYELONEPHRITIS COMPLICATING PREGNANCY.*

By SAXTON T. POPE, M. D., Watsonville.

From the scant reference to this subject in current medical literature and text-books, we might be led to think that Pyelonephritis during gestation, is an unusual disease.

Even Osler, who usually is so explicit in the enumeration of all possible etiologic factors, fails to mention pregnancy as a prevalent cause of pus kidney.

Smith, in the *Journal of Obstetrics and Gynecology of the British Empire,* reports three cases, and handles the whole subject as if it were one of comparative novelty. He could collect only eighteen cases in literature. In my dealing with physicians, I never have heard the subject mentioned. This is all very strange. That cystitis, pyelitis and pyelonephritis are very common disturbances during the pregnant state, should be the experience of all who have the opportunity to observe women throughout their child-bearing period.

So clearly are these cases marked that even I, with all my stupidity, have seen six in a series of seventy-eight pregnancies, covering a period of five years' obstetrical work.

It takes no great amount of acumen to diagnosticate cystitis; yet how many of us recognize its frequency in pregnancy. The diagnosis of pyelitis, coming on after an attack of cystitis, is almost unmistakable in its symptoms and signs. The woman, after a period of vesical irritation, which probably she thinks is only part of the normal discomfort of her condition, experiences acute pain in her loin, hip, or lumbar region, has vesical tenesmus; passes purulent, or bloody urine, and has a chill, incident to the onset of fever. An examination reveals that she has a tender kidney, possibly also the ureter is sensitive to palpation; her urine has a trace of albumen, and contains miscroscopic blood, casts and pus. Her fever reaches 103° or 104°, and there is a leukocytosis from 15,000 to 20,000.

This should be a sufficiently clear picture to designate the disease as an inflammatory lesion of the kidney; without the aid of a cystoscopic examination, ureteral catheterization, and the more refined methods of urinalysis. And it is not necessary that the inflammatory process damage the renal parenchyma to such an extent that necrosis, multiple abscess formation, and surgical kidney result, before the diagnosis can be made.

The theory has been advanced, that ureteral compression is partially responsible for the infection of the renal pelvis; and probably this is correct. In pregnancy the uterus, by its increasing amplitude, obstructs the superior straits of the pelvis, and rests directly upon the ureters, as they cross the brim. A hydroureter is thus produced as well as a distention of the pelvis of the kidney.

With this mechanical insult to the upper renal tract, it is not surprising that an ascending infection take place from the already infected bladder.

The frequency of cystitis, is, itself, startling. In this series of seventy-eight pregnancies, I have recorded eighteen cases of inflammation of the bladder. This is 25%, or one woman in four has cystitis, while in the gravid state.

It is not all from the gonococcus, either; for from several of the urines, the colon bacillus, and a streptococcus, were the infecting bacteria.

I report, in outline, the six cases of pyelitis, or pyelonephritis, occurring in seventy-eight consecutive pregnancies.

(1.) E. W., aet 31, Primipara. Had an attack of cystitis when four months pregnant, with sympto-

* Read before the California Academy of Medicine, March, 1908.

matic recovery. During the seventh month of gestation, after unusual physical activity, the cystitis returned. She was confined to bed, given a urinary disinfectant and copious drafts of water. On the evening of the third day of her cystitis, she experienced an intense pain in the right lumbar region, which radiated down the groin. This was sufficient to warrant morphia. An examination of the urine, by catheterization, showed a trace of albumen, microscopically, blood, renal epithelium and coarse granular casts were present, with pus in abundance. The temperature was 104°—the leucocytes 20,000. The abdomen became tympanitic; the right kidney was palpable, and very tender. The appendix and uterine adnexa were normal. There was no evidence of disease in any other region; no edema. The fever continued, a septic type, for a week, then it declined as the pyuria diminished during the use of hexamethylene tetramine, milk diet, and an abundance of water. The vesical improvement was slower. A culture from the urine demonstrated the colon bacillus. Two weeks later she experienced a mild recurrence of the pyelitis. Under a continuation of urinary disinfection, the pregnancy progressed to full term without complication, though the puerperium was marked by a rise of temperature from some indefinite cause.

(2.) Mrs. J. B., aet. 22. Bipara, in the fifth month of pregnancy came complaining of vesical irritation. An examination of the urine, showed a large quantity of pus, with no serum albumen. She was given appropriate treatment, but continued her household duties. One week later, she was seized with a very acute pain in the right flank, had a chill and an attack of vomiting. Upon examination I thought she had acute appendicitis, and advised her removal to a hospital. At this time she was very sensitive over McBurney's point. Through lack of confirmatory evidence, operation was deferred, although her leucocytes were 16,000, her temperature 102°, and the pain severe. The next day, the urine was examined, and showed a slight amount of albumen, some hyaline and cellular casts, blood corpuscles, and pus, containing streptococci. The pain diminished, and shifted to the right kidney region. Her temperature declined, and the condition of pyelonephritis was apparent, and not that of acute appendicitis. Resorting to urinary disinfection and the usual palliative measures, she recovered within ten days, and returned home to continue her pregnancy in peace.

(3) Mrs. E. S., aet. 30, Bipara, had a mild recurrent cystitis, throughout much of her gravid term, but continued in fair health until after her confinement. One week subsequent to an easy delivery, her temperature rose to 103°, leucocytes to 18,000, and she experienced a sharp pain in the right lumbar region. The kidney was prolapsed, palpably enlarged, and very tender. The pelvic viscera seemed perfectly normal; the generative tract was free from laceration and infection; the breasts were above suspicion. The urine by catheter contained pus, and a moderate amount of albumen. Hot fomentations, renal support, urinary disinfection and milk diet, hastened a symptomatic recovery within two weeks.

(4.) Mrs. P. S., aet. 24, Bipara, has pulmonary tuberculosis, in the first stage. When four months pregnant, and still affected with morning nausea, she developed cystitis. After suffering two or three weeks, she called me to relieve a severe pain in her side. Her temperature was 103°; she was perspiring profusely; the right kidney was extremely sensitive, and her pain required a hypodermic injection of morphin. The urine contained plenty of pus, and a trace of albumen, and streptococci. After two weeks of a mild septic fever and lumbar pain, her condition improved sufficiently for her to resume light household duties. The remainder of her pregnancy was uneventful. At present she is free from pyuria; her pulmonary lesions are quiescent, and there are no signs of a tuberculous kidney.

(5.) Mrs. J. W., aet. 32, Bipara, called me for the first time during an attack of renal colic. She was six months pregnant. She had vomited. Her temperature was 103.5°; the right kidney and ureter were very tender, and the urine contained albumen, pus and considerable blood. With rest in bed, hexamethylene tetramine, saline catharsis, and copious drafts of water, she improved and on the third day passed light flocculent sodium urate concretions in the urine. She had a history of cystitis for a month prior to this sickness. Her confinement, by another physician, she says, was marked by a post partum fever and dysuria. A third pregnancy, through which I cared for her, was attended by a mild cystitis, but no complications. She has had gonorrhea, but there was no evidence of a gram-proof diplococcus in her pus corpuscles. This suggests nephrolithiasis, but considering the preliminary cystitis, and occurrence of fever, it is obvious that the renal sand was a recent precipitate due to the change in reaction and constituents of the urine.

(6.) Mrs. H. R., aet. 26, Primipara, contracted gonorrhea, with salpingitis, before her impregnation and suffered with cystitis, more or less, during the first five months. At the sixth month, after spending long hours on her feet, as a waitress in a restaurant, she reported to me with considerable pain in her left loin, hip and back. Percussion over the left kidney gave her pain, and the viscus was very sensitive to pressure and apparently enlarged. Her temperature was 102°. Her urine, by catheter, contained the usual amount of pus, but in addition, showed serum albumen, leukocytic casts, and red blood corpuscles. Both gonococci and streptococci were evident in her urinary sediment. She was confined to bed for ten days, during which time she had repeated chills, sweating and fever. Upon two occasions she experienced severe renal colic, and passed large plugs of mucus and pus in the urine. She was given morphia, p. r. n., and methylene blue, in combination with hexamethylene tetramine. After two weeks of fever, the urine became clear of albumen, but still contained pus, miscroscopically. She had no post partum complications.

It will be noticed in these histories, that none of the cases were very severe; none developed pyonephrosis, or perinephritic abscess.

The treatment is simple and effective. We have, practically, only one urinary disinfectant: hexamethylene tetramine. Milk diet, saline laxatives, plenty of water, rest in bed, hot compresses and sedatives for the pain, constitute the treatment. Apparently the only difficult thing to do, is to remember that cystitis, and pyelitis, are of common occurrence, during pregnancy.

THE EXPERIMENTAL FEEDING OF BORACIC ACID TO WHITE RATS.[1]

By GEO. B. WORTHINGTON, M. D., Marysville.

As is well known, both borax and boracic acid have been largely used in the past as food preservatives, having been detected in varying amounts up to four per cent in many different food products. Milk, butter, cheese, fish and meats are frequently preserved in this manner, and hence it is of im-

(1.) Notes on this subject read before the Cooper College Science Club, August, 1907.